

General

Title

Long-stay nursing home care: percent of residents experiencing one or more falls with major injury.

Source(s)

RTI International. MDS 3.0 quality measures user's manual, v9.0. Baltimore (MD): Centers for Medicare & Medicaid Services (CMS); 2015 Oct 1. 80 p.

Measure Domain

Primary Measure Domain

Clinical Quality Measures: Outcome

Secondary Measure Domain

Does not apply to this measure

Brief Abstract

Description

This measure is used to assess the percent of long-stay residents who have experienced one or more falls with major injury reported in the target period or look back period.

Rationale

Research findings indicate that approximately 75% of nursing facility residents fall at least once a year; twice the rate of their counterparts in the community (Rubenstein, Josephson, & Robbins, 1994). Further, it is estimated that 10% to 25% of nursing facility resident falls result in fractures and/or hospitalization (Vu, Weintraub, & Rubenstein, 2004). Saliba and Buchanan (2008) tested the proposed Minimum Data Set (MDS) 3.0 items, including those assessing the prevalence of any falls and falls with major injuries. Their study included 4,586 residents from 71 community nursing facilities and 19 Veteran's Administration nursing facilities in 8 different states and found rates of falls and falls with injury similar to those reported in the literature. During their six-month data collection period, they found that approximately 24% of patients reported at least one fall since the prior assessment. Among the 24% who experienced a

fall, 9% had at least one fall with major injury and an additional 30% had at least one fall with minor injury (Saliba & Buchanan, 2008).

Monitoring the prevalence of injurious falls at the facility level is very important for protecting the health of nursing facility residents. Research has shown that falls resulting in serious injury, such as hip fracture, are a leading cause of death and disability in this population (Rubenstein, Josephson, & Robbins, 1994). The prevalence of injurious falls occurs for many reasons, many of which are preventable. Fonad and colleagues (2008) found significant correlations between fall risk and use of wheelchairs, safety belts, and bed rails, highlighting an area to refocus efforts for preventative measures. Moreover, studies show that such falls can leave up to 50% to 65% of residents with fears that affect both their functional abilities and social activities (Magaziner et al., 1997; Yardley & Smith, 2002).

Falls also represent a significant cost burden to the entire health care system, with injurious falls accounting for 6% of medical expenses among those age 65 and older (Tinetti & Williams, 1998). Studies have shown that falls account for 10% of visits to the emergency department and 6% of urgent hospitalizations among elderly people (Tinetti, 2003). In addition, a 1993 review estimated the lifetime costs associated with fall-related injuries (direct, morbidity, and mortality) to be \$12.6 billion, or approximately 6% of all medical care expenses for the elderly United States (U.S.) population (Runge, 1993). Among the skilled nursing facility population, the average 6-month cost of a patient with a hip fracture was estimated at \$11,719 in 1996 U.S. dollars (Kramer et al., 1997).

Evidence for Rationale

Fonad E, Wahlin TB, Winblad B, Emami A, Sandmark H. Falls and fall risk among nursing home residents. *J Clin Nurs*. 2008 Jan;17(1):126-34. [PubMed](#)

Kramer AM, Steiner JF, Schlenker RE, Eilertsen TB, Hrinkevich CA, Tropea DA, Ahmad LA, Eckhoff DG. Outcomes and costs after hip fracture and stroke. A comparison of rehabilitation settings. *JAMA*. 1997 Feb 5;277(5):396-404. [PubMed](#)

Magaziner J, Lydick E, Hawkes W, Fox KM, Zimmerman SI, Epstein RS, Hebel JR. Excess mortality attributable to hip fracture in white women aged 70 years and older. *Am J Public Health*. 1997 Oct;87(10):1630-6. [PubMed](#)

National Quality Forum measure information: percent of residents experiencing one or more falls with major injury (long stay). Washington (DC): National Quality Forum (NQF); 2015 Feb 19. 29 p.

Rubenstein LZ, Josephson KR, Robbins AS. Falls in the nursing home. *Ann Intern Med*. 1994 Sep 15;121(6):442-51. [72 references] [PubMed](#)

Runge JW. The cost of injury. *Emerg Med Clin North Am*. 1993 Feb;11(1):241-53. [PubMed](#)

Saliba D, Buchanan J. Development & validation of a revised nursing home assessment tool: MDS 3.0. Contract No. 500-00-0027/Task Order #2. Santa Monica (CA): Rand Corporation; 2008 Apr.

Tinetti ME, Williams CS. The effect of falls and fall injuries on functioning in community-dwelling older persons. *J Gerontol A Biol Sci Med Sci*. 1998 Mar;53(2):M112-9. [PubMed](#)

Tinetti ME. Clinical practice. Preventing falls in elderly persons. *N Engl J Med*. 2003 Jan 2;348(1):42-9. [60 references] [PubMed](#)

Vu MQ, Weintraub N, Rubenstein LZ. Falls in the nursing home: Are they preventable. *J Am Med Dir*

Yardley L, Smith H. A prospective study of the relationship between feared consequences of falling and avoidance of activity in community-living older people. *Gerontologist*. 2002 Feb;42(1):17-23. [PubMed](#)

Primary Health Components

Nursing home; long-stay; falls

Denominator Description

All long-stay nursing home residents with one or more look-back scan assessments except those with exclusions (see the related "Denominator Inclusions/Exclusions" field)

Numerator Description

Long-stay residents with one or more look-back scan assessments that indicate one or more falls that resulted in major injury (see the related "Numerator Inclusions/Exclusions" field)

Evidence Supporting the Measure

Type of Evidence Supporting the Criterion of Quality for the Measure

A clinical practice guideline or other peer-reviewed synthesis of the clinical research evidence

A formal consensus procedure, involving experts in relevant clinical, methodological, public health and organizational sciences

A systematic review of the clinical research literature (e.g., Cochrane Review)

One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

Additional Information Supporting Need for the Measure

Race

Analyses of racial/ethnic disparities were conducted at both the resident and facility levels using Minimum Data Set (MDS) 3.0 data from Quarter 2 (Q2) 2014. Resident level analyses used data for all long-stay residents (1,160,465 individuals), and facility level analyses were for the 13,751 facilities that met the required minimum number of residents for public reporting. The lowest rate of injurious falls was found among black residents (1.2%) and the highest rate was among white residents (3.5%). Differences in the rate of falls with major injury by racial/ethnic group were found to be statistically significant (p less than 0.0001).

Analyses at the facility level examined differences in the percent of residents who experienced one or more falls with a major injury compared across two groups: facilities with proportions of white residents that were greater than or equal to the median proportion (88.4%) for facilities with sufficient denominator size to meet minimum requirements for public reporting, and facilities with fewer white residents than the median. Facilities whose residents population included a greater proportion of non-white residents had higher proportions of residents who had an injurious fall than did facilities serving a greater proportion of white residents. In an additional analysis, the developer cross-tabulated racial

composition (above/below median) with quality measure (QM) score (above/below median) and ran a 2-way Chi-square test for statistical dependence (with one degree of freedom). The results showed that there were statistically significant relationships between racial composition and the QM score (P less than 0.001). These results appear to contradict finding of greater rates of falls among white residents, but may be understood as the distinction between resident level and facility level measures.

Socioeconomic Status

To examine the potential for a relationship between socioeconomic disparity and injurious falls, the developer examined the performance of this measure in facilities stratified by the proportion of residents who are Medicaid eligible. Medicaid eligibility is a proxy measure of low socioeconomic status. For this analysis, facilities were stratified into two groups: facilities with greater than 75% of residents who were Medicaid eligible and facilities with less than 75% of residents who were Medicaid eligible (75% of facilities have 75% or more of residents included in this measure who are Medicaid eligible). In Q2 of 2014, the mean score on this measure for facilities with a higher proportion of Medicaid eligible residents was 3.1%, versus 3.7% for facilities with a smaller proportion of Medicaid eligible residents. This is a significant difference between the two groups [$F(1,13725) = 114.14$, $p = \text{less than } .0001$]. Thus, the relationship between socioeconomic status, as stratified by the proportion of residents who are Medicaid eligible, suggests that facilities with a higher proportion of low socioeconomic status residents have lower rates of falls with major injury.

Evidence for Additional Information Supporting Need for the Measure

National Quality Forum measure information: percent of residents experiencing one or more falls with major injury (long stay). Washington (DC): National Quality Forum (NQF); 2015 Feb 19. 29 p.

Extent of Measure Testing

A joint RAND/Harvard team engaged in a deliberate iterative process to incorporate provider and consumer input, expert consultation, scientific advances in clinical knowledge about screening and assessment, Centers for Medicare & Medicaid Services (CMS) experience, and intensive item development and testing by a national Veteran's Health Administration (VHA) consortium. This process allowed the final national testing of Minimum Data Set (MDS) 3.0 to include well-developed and tested items.

The national validation and evaluation of the MDS 3.0 included 71 community nursing homes (NHs) (3,822 residents) and 19 VHA NHs (764 residents), regionally distributed throughout the United States. The evaluation was designed to test and analyze inter-rater agreement (reliability) between gold-standard (research) nurses and between facility and gold-standard nurses, validity of key sections, response rates for interview items, anonymous feedback on changes from participating nurses, and time to complete the MDS assessment.

Analysis of the test results showed that MDS 3.0 items had either excellent or very good reliability even when comparing research nurse to facility-nurse assessment. In most instances these were higher than those seen in the past with MDS 2.0. In addition, for the cognitive, mood and behavior items, national testing included collection of independent criterion or gold-standard measures. These MDS 3.0 sections were more highly matched to criterion measures than were MDS 2.0 items.

Improvements incorporated in MDS 3.0 produced a more efficient assessment: better quality information was obtained in less time. Such gains should improve identification of resident needs and enhance resident-focused care planning. In addition, including items recognized in other care settings is likely to enhance communication among providers. These significant gains reflect the cumulative effect of changes across the tool, including use of more valid items, direct inclusion of resident reports, improved clarity of retained items, deletion of poorly performing items, form redesign, and briefer assessment periods for clinical items.

Refer to *Development & Validation of a Revised Nursing Home Assessment Tool: MDS 3.0*. for additional information.

Evidence for Extent of Measure Testing

Saliba D, Buchanan J. Development & validation of a revised nursing home assessment tool: MDS 3.0. Baltimore (MD): Quality Measurement and Health Assessment Group, Office of Clinical Standards and Quality, Centers for Medicare & Medicaid Services; 2008 Apr. 263 p.

State of Use of the Measure

State of Use

Current routine use

Current Use

not defined yet

Application of the Measure in its Current Use

Measurement Setting

Skilled Nursing Facilities/Nursing Homes

Professionals Involved in Delivery of Health Services

not defined yet

Least Aggregated Level of Services Delivery Addressed

Single Health Care Delivery or Public Health Organizations

Statement of Acceptable Minimum Sample Size

Specified

Target Population Age

All ages

Target Population Gender

Either male or female

National Strategy for Quality Improvement in Health Care

National Quality Strategy Aim

Better Care

National Quality Strategy Priority

Making Care Safer

Prevention and Treatment of Leading Causes of Mortality

Institute of Medicine (IOM) National Health Care Quality Report Categories

IOM Care Need

Getting Better

IOM Domain

Effectiveness

Safety

Data Collection for the Measure

Case Finding Period

Quarterly

Denominator Sampling Frame

Patients associated with provider

Denominator (Index) Event or Characteristic

Diagnostic Evaluation

Institutionalization

Denominator Time Window

not defined yet

Denominator Inclusions/Exclusions

Inclusions

All long-stay* nursing home residents with one or more look-back scan assessments except those with exclusions

*Long-stay: An episode with cumulative days in facility (CDIF) greater than or equal to 101 days as of the end of the target period.

Exclusions

Resident is excluded if one of the following is true for *all* of the look-back scan assessments:

The occurrence of falls was not assessed, *or*

The assessment indicates that a fall occurred *and* the number of falls with major injury was not assessed.

Note: Refer to the original measure documentation for details.

Exclusions/Exceptions

not defined yet

Numerator Inclusions/Exclusions

Inclusions

Long-stay residents with one or more look-back scan assessments that indicate one or more falls that resulted in major injury

Note: Refer to the original measure documentation for details.

Exclusions

Unspecified

Numerator Search Strategy

Institutionalization

Data Source

Administrative clinical data

Type of Health State

Adverse Health State

Instruments Used and/or Associated with the Measure

Center for Medicare & Medicaid Services (CMS) Minimum Data Set (MDS) - Resident Assessment Instrument (Version 3.0)

Computation of the Measure

Measure Specifies Disaggregation

Does not apply to this measure

Scoring

Rate/Proportion

Interpretation of Score

Desired value is a lower score

Allowance for Patient or Population Factors

not defined yet

Standard of Comparison

not defined yet

Identifying Information

Original Title

Percent of residents experiencing one or more falls with major injury (long-stay).

Measure Collection Name

Nursing Home Quality Initiative Measures

Measure Set Name

Long-stay Quality Measures

Submitter

Centers for Medicare & Medicaid Services - Federal Government Agency [U.S.]

Developer

Centers for Medicare & Medicaid Services - Federal Government Agency [U.S.]

RTI International - Nonprofit Research Organization

Funding Source(s)

United States (U.S.) Government

Composition of the Group that Developed the Measure

United States (U.S.) Government Staff, Clinical Experts, Researchers, and Statisticians

Financial Disclosures/Other Potential Conflicts of Interest

No conflicts of interest exist.

Endorser

National Quality Forum - None

NQF Number

not defined yet

Date of Endorsement

2015 Dec 9

Measure Initiative(s)

Nursing Home Compare

Adaptation

This measure was not adapted from another source.

Date of Most Current Version in NQMC

2015 Oct

Measure Maintenance

Annual and endorsement

Date of Next Anticipated Revision

Quarter 2 2016

Measure Status

This is the current release of the measure.

This measure updates a previous version: RTI International. MDS 3.0 quality measures user's manual. v8.0. Baltimore (MD): Center for Medicare & Medicaid Services (CMS); 2013 Apr 15. 80 p.

Measure Availability

Source available from the [Centers for Medicare & Medicaid Services \(CMS\) Web site](#) .

For more information, refer to the CMS Web site at www.cms.gov .

Companion Documents

The following are available:

Saliba D, Buchanan J. Development & validation of a revised nursing home assessment tool: MDS 3.0. Baltimore (MD): Quality Measurement and Health Assessment Group, Office of Clinical Standards and Quality, Centers for Medicare & Medicaid Services; 2008 Apr. 263 p. Available from the [Centers for Medicare & Medicaid Services \(CMS\) Web site](#) .

Nursing Home Compare. [internet]. Baltimore (MD): Centers for Medicare & Medicaid Services (CMS). 2000- [updated 2012 Nov 15]; [cited 2012 Nov 27]. This tool is available from the [Medicare Web site](#) .

NQMC Status

This NQMC summary was completed by ECRI Institute on August 15, 2013. The information was verified by the measure developer on December 3, 2013.

This NQMC summary was updated by ECRI Institute on May 31, 2016. The information was not verified by the measure developer.

Copyright Statement

No copyright restrictions apply.

Production

Source(s)

RTI International. MDS 3.0 quality measures user's manual, v9.0. Baltimore (MD): Centers for Medicare & Medicaid Services (CMS); 2015 Oct 1. 80 p.

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